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BRIEF INFORMATION ON INSECT DAMAGE TO GREEN ASH LOGS AND LUMBER IN THE SOUTHERN ATLANTIC AND GULF STATES, PARTICULARLY IN THE DELTA REGION OF THE MISSISSIPPI RIVER.

Character and Extent of Damage.

The principal damage to green ash logs and lumber is due primarily to attack by two classes of wood-boring insects, namely, pinhole borers or ambrosia beetles and wormhole borers. Their habits differ considerably.

Pinhole borer damage is caused by the adult beetles when they bore holes or burrows in the wood, not much larger than the head of a pin, for the purpose of rearing their young. The beetles are attracted to freshly cut trees, logs, and lumber only when in a green or moist condition, because moisture is necessary for the growth of a so-called ambrosia fungus on the walls of the pinhole burrows on which the beetles and their young live. Therefore, any agency or combination of agencies, which retards drying, such as leaving green logs in moist, shaded places or placing freshly sawed lumber in close piles during the period of insect activity, will offer favorable conditions for attack by insects of this class.

Wormhole borer damage differs radically from pinhole borer injury in that it is caused by the young forms or grubs and not by the adults. The presence of bark is absolutely necessary for successful infestation by most of the wood-boring grubs, because the eggs and young stages must occupy it before the latter can enter the wood. It usually takes nearly one month, after the eggs have been deposited in the bark by the adult beetles, for the grubs to develop sufficiently to enter the sapwood, where they make large holes. When green logs are left in the woods for a short time after being felled, or the bark is left on the edges of freshly sawed lumber, during the period of insect activity, the wood will be attractive to these borers.

Under such conditions, damage to the wood by both classes of insects may result in a loss of from 40 to 50 per cent in a very short time. In some instances recently felled timber had to be abandoned and green lumber was reduced in value from the best grades to culls.

Remedy.

Damage to infested lumber can be checked, where practicable, by saturating it with a liberal solution of liquid orthodichlorobenzene. Injury to infested logs can be checked, in cases where the grubs are only

under the bark, by submerging in water. Once they are established in the sapwood, it is more difficult to kill them.

Prevention

The most practical way of protecting green ash logs and lumber from insect injury is to make such changes in the methods of management in the woods and in the storage of logs at the mill or in the lumber yard as are necessary to produce conditions unfavorable for these insects. Such procedure is necessary since they are active nearly the entire year. Ambrosia beetles are active in both the Delta section of the Mississippi River and in the South Atlantic States from February 15 to November 15, causing most serious damage during warm, damp days of the summer. Occasionally they will appear during mild days of an open winter. Adults of the wormhole borers are more or less active during the entire summer. In the Delta section the beetles have two main flight periods (February 15 to March 15; May 15 to June 15) and a partial third (August 15 to November 15) each year. In the South Atlantic States, along the Savannah and Altamaha Rivers, the period of activity is somewhat shortened (April 1 to October 15).

Protection of green logs when prepared for floating.

For logs near the water. -

(1) Cut the timber at any time of the year provided the logs are in the water one month after felling.

(2) Prevent logs from being left on the ground during the flight periods of the insects.

(3) Avoid leaving logs in the woods in low, damp, shaded places. When not possible to remove them at once, pull to higher places and cut the surrounding shrubs and trees which produce excessive shade. (Such a procedure will aid rapid seasoning and make the logs less attractive to pinhole borers.)

(4) Logs that must be left on the river bank for several weeks before rafting should be placed on saplings on the ground to expedite drying by the free circulation of air and sunshine.

(5) Logs cut in the Delta section between October 15 and February 15 may be left in the woods until March 15, provided the above precautions (2 and 3) are taken. This period in the South Atlantic States may be extended to May 1.

(6) When rafts are made of green timber, and shoots grow so as to shade the logs, the growth should be removed.

(7) Keep the rafts in the sun as much as possible.

For logs away from the water (Delta section). -

(1) Be reasonably certain of a rise in the river before beginning cutting for rafting.

(2) If there are no signs of a rise in the river by March 1, cut and haul the logs to the bayou by March 15 and submerge to kill the young borers in them.

Protection of green logs when not prepared for floating.

Sun curing method (to be used when transportation by water or quick removal by rail is not possible -

(1) Remove logs from the woods as soon as cut, and lay singly in the sun. Turn bottom side up after one month (the hot sun kills the borers).

(2) As far as possible avoid cutting during the flight periods of the insects.

(3) Do not cut more than six weeks ahead of the mill, and saw logs in order cut.

(4) Turn up the bottom side of logs that have been in the millyard one month during the flight period.

(5) Avoid leaving slabs and culls about the millyard to serve as breeding places for the insects.

(6) Provide for a storage basin at the mill, if possible, to protect logs until sawed and to serve as a reserve supply.

(7) When not possible to provide a storage basin and the logs must be exposed to insect attack for some time, the following procedure is recommended:

(a) Arrange a system of skids in the millyard so that the logs can be unloaded directly from the cars or trucks to skids.

(b) Leave space between the logs so as to receive the maximum amount of ventilation and sunlight.

Protection of green lumber.

Moist green lumber sawed during the summer months should be kiln-dried when possible; otherwise observe the following procedure:

(1) Rack lumber until dry before piling, during the summer.

(2) Cross-rack lumber during the spring and fall to aid rapid drying.

(3) Pile lumber with flue in center to aid rapid seasoning. (Care must be taken that it does not check by drying too fast.)

(4) Cut heavy dimension stuff, as far as possible, during the fall and winter months.

(5) End pile lumber during the winter, if necessary, to hasten drying.

(6) Unless the trade requires it, avoid leaving bark on the edges of lumber sawed from green logs.

(7) Lumber yards located on flat, low, damp areas, where the water stands after heavy rains, should be drained by a system of trenches.

R. A. St. George,

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